ABSTRACT OF THE DISCLOSURE

A technique for measuring spectral components, such as noise and distortion, of a non-coherently sampled test signal containing at least one tone of known frequency includes modeling the spectral components of the at least one tone, including the effects of leakage, based upon frequency of the at least one tone and a plurality of known sampling parameters. A DFT is taken of the sampled test signal, and the DFT is adjusted based on the modeled spectral components. The adjusted DFT is substantially leakage-free and directly reveals spectral components of the test signal, including low-power components that would ordinarily be lost in the leakage errors.